



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,792	03/05/2002	Takeshi Yoshimura	220298US2	2961

22850 7590 09/28/2006

C. IRVIN MCCLELLAND
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

LEVITAN, DMITRY

ART UNIT PAPER NUMBER

2616

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,792

Applicant(s)

YOSHIMURA ET AL.

Examiner

Dmitry Levitan

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Amendment, filed 8/22/06, has been entered. Claims 1-26 remain pending.

Drawings

The drawings were received on 8/22/06. These drawings are approved. The objection to the drawings, set in the previous Office action, has been withdrawn.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Packet communication system with packets classification, division and retransmission.

Claim Objections

In light of Applicant's amendment, the objection to claims 9-26 has been withdrawn.

Claim Rejections - 35 USC § 112

1. In light of Applicant's amendment, the rejection of claims 1-20, 23-25 under 35 U.S.C. 112, second paragraph, set in the previous Office action, has been withdrawn.
2. Claims 7-16 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7, 9, 11, 13, 15 and 17 limitation "an assembling part for assembling in each of QoS classes some data units which belong to one of the QoS classes specified for real time

Art Unit: 2616

packets” is unclear because it is not understood what “some data units” means in the context of the claim, as “some” adds undefined limitation to data units assembly process.

Claim Rejections - 35 USC § 103

3. Claims 1-8, are rejected (as best understood) under 35 U.S.C. 103(a) as being unpatentable over Olsson (US 6,577,596) in view of Admitted Prior Art (Background of Invention, pages 1-5).

Olsson substantially teaches the limitations of the claims:

A packet transmission method, system and apparatus for transmitting packets classified per QoS requirement from a transmitting node to a receiving node (inherently part of the system, because Olsson system operates in a communication network, comprising numerous transmitting and receiving nodes 1:12-27, wherein a transmitting node is show on Fig. 2 and 3, 6:62-7:46), comprising:

selecting sequentially a QoS class (processing sequential packets 211 and 212 of Fig. 2 to an appropriate queue 221-224 for storage, according to the packets time sensitivity 6:62-7:3 or QoS information 7:22-30),

Compressing the headers of the packet (compressing the header of an IP packet, as header of the packet compression can be performed at various stages 6:4-47, as performing the header compression before or after fragmentation has certain advantages and disadvantages 4:5-20 and 7:47-56),

Art Unit: 2616

dividing a queued packet of the selected class into a plurality of predetermined data units (dividing long packet 213 into fragments 213a-c and storing them in the appropriate queue, shown on Fig. 2 and 4, 7:7-17),

and transmitting the packets (sending packets by process 231 according to the packet priority 7:39-46 to transmit queue 232 on Fig. 2 for transmission to link 233),

receiving and decompressing fragments to restore the original packet (inherently part of the system, because the operation of the restoration of the original packet at the receive node is essential for the system operation).

In addition, Olsson teaches packets associated with real time communication, like speech or video and other type packets with different time sensitivity 6:65-7:14 and does not recommend retransmission of real time data 3:61-63.

Olsson does not teach retransmission control process for data type packets.

Admitted Prior Art teaches retransmission control process (retransmitting packet lost at transmission on the basis of QoS class, pages 3:34-4:21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add retransmission control process of Admitted Prior Art, applied to the non-real time packets to the system of Olsson to improve the system error rate for the non-real time packets and avoiding time delaying retransmission for the real-time packets.

In addition, regarding claims 7 and 8, Olsson teaches an apparatus, wherein functions of dividing, compressing, scheduling, etc, as disclosed above, are implemented in software modules/layers 4:48-54.

Art Unit: 2616

4. Claims 9, 10, 15, 16, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson in view of Admitted Prior Art in further view of Jorgensen (US 6,452,915).

Olsson in view of Admitted Prior Art substantially teaches the limitations of claims 9 and 10 (see claim 1 rejection above), including pre-scheduling part for packets classification 215, dividing part for fragmenting the queued packets LFI 220 and scheduling part for selecting packets for transmission 231 and giving priority to real time packets.

Olsson in view of Admitted Prior Art does not teach two separate pre-scheduling parts and two separate dividing parts for real time and data type packets and classifying the retransmitted packets.

Jorgensen teaches classifying the retransmitted packets by keeping the transmitted packets in the queues for retransmission, as shown in Fig. 15B and 64:24-36.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to separate pre-scheduling and dividing parts in two portions, dedicated for real time and data type packets and add classifying the retransmit packets of Jorgensen to the system of Olsson in view of Admitted Prior Art as obvious design choice to improve the system speed and handling of real time packets by processing packets in parallel, assigning a separate path for real time packets and giving proper priority to retransmitted packets.

See *Nerwin v. Erlichman* 168 USPQ 177.

In addition regarding claims 15, 16, 21 and 22, retransmission control process of Admitted Prior Art inherently teaches transmission side and receiving side retransmission control parts, wherein the receiving part generates a request indicating a missing packet, because these

Art Unit: 2616

parts and request are essential for the retransmission process. Admitted Prior Art also teaches applying the retransmission process to all QoS classes on page 4.

5. Claims 11-14, 17-20 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson in view of Admitted Prior Art in further view of Jorgensen (US 6,452,915).

Olsson in view of Admitted Prior Art substantially teaches the limitations of claims 9 and 10 (see claim 1 rejection above), including pre-scheduling part for packets classification 215, dividing part for fragmenting the queued packets LFI 220 and scheduling part for selecting packets for transmission 231 and giving priority to real time packets, inherently comprising transmitting all type of packets, including real time and data type.

Olsson in view of Admitted Prior Art does not teach classifying the retransmitted packets.

Jorgensen teaches classifying the retransmitted packets by keeping the transmitted packets in the queues for retransmission, as shown in Fig. 15B and 64:24-36.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add classifying the retransmit packets of Jorgensen to the system of Olsson in view of Admitted Prior Art to improve the system handling of real time packets by giving proper priority to the retransmitted packets.

In addition regarding claims 13, 14, 19 and 20, retransmission control process of Admitted Prior Art inherently teaches transmission side and receiving side retransmission control parts, wherein the receiving part generates a request indicating a missing packet, because these parts and request are essential for the retransmission process. Admitted Prior Art also teaches applying the retransmission process to all QoS classes on page 4.

Art Unit: 2616

In addition, regarding claims 17 and 18, Olsson teaches a node 200 inherently comprising transmission and receiving, because it is an Internet node performing by-directional communication applications, like VoIP 1:12-27.

Response to Arguments

6. Applicant's arguments filed 8/22/06 have been fully considered but they are not persuasive.

On page 26 of the Response, Applicant argues that Olsson does not disclose dividing every single packet to be sent into predetermined data units, therefore making claim 1 patentable over Olsson.

Examiner respectfully disagrees.

Claim 1 does not comprise a limitation directed to dividing every single packet to be sent into predetermined data units, making the Applicant's arguments irrelevant.

In addition, the system of the current application and the system of Olsson, operate with variable length packets, including the packets with very short length, which could be smaller than the size of the predetermined data units, making impossible or unpractical to divide these packet into the predetermined data units.

On page 26 of the Response, Applicant argues that Jorgensen does not teach dividing every single packet to be sent into predetermined data units, therefore making claim 1 patentable.

Examiner respectfully disagrees.

Claim 1 rejection is not based on the Jorgensen teachings (see claim 1 rejection above).

If Applicant's arguments are directed to claims 9, 10, 15, 16, 21 and 22, rejected as unpatentable over Olsson in view of Admitted Prior Art in further view of Jorgensen, the rejection of the claims limitation directed to the dividing step are based on the teachings of Olsson, not Jorgensen.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571) 272-7529. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'DL' followed by a stylized name.

Dmitry Levitan
Examiner
Art Unit 2616